CLAIMS

What is claimed is:

1. An implantable cardiac stimulation device comprising:

a sensing circuit that senses cardiac activity of a heart using a time-varying sensing threshold that varies during each cycle, wherein the cardiac activity includes T-wave activity;

a pulse generator that applies electrical energy to the heart in response to the sensed cardiac activity of the heart; and

a threshold control comprising a detector that determines a plurality of morphological characteristics of the T-wave activity and that adjusts the time-varying sensing threshold of the sensing circuit in response to the determined morphological characteristics of the T-wave activity.

2. The device of claim 1 wherein the sensing circuit senses ventricular activity and wherein the plurality of morphological characteristics include T wave amplitude and duration.

3. The device of claim 2 wherein the T wave characteristics include T wave location.

4. The device of claim 2 wherein the detector further determines a plurality of R wave characteristics of the cardiac activity and wherein the threshold control varies the sensing threshold in response to the determined T wave characteristics and the determined R wave characteristics.

5. The device of claim 1 wherein the detector determines the morphological characteristics of intrinsic cardiac activity.

6. The device of claim 1 wherein the detector determines the morphological characteristics of intrinsic and paced cardiac activity.

7. The device of claim 6 wherein the threshold control compares determined morphological characteristics of paced cardiac activity to determined morphological characteristics of intrinsic cardiac activity prior to varying the sensing threshold.

8. The device of claim 1 wherein the sensing circuit is an atrial sensing circuit that senses atrial activity and wherein the threshold control varies the sensing threshold to preclude sensing of far field R waves by the atrial sensing circuit.

9. The device of claim 8 wherein the morphological characteristics include far field R wave amplitude and far field R wave location.

10. In an implantable cardiac stimulation device, a method of determining a time-varying sensing threshold waveform that varies during each cycle, the method comprising:

sensing cardiac activity of the heart, including T-wave activity;

measuring a plurality of morphological characteristics of the T-wave activity; and

defining the time-varying sensing threshold waveform based upon the plurality of morphological characteristics of the T-wave activity.

11. The method of claim 10 wherein the morphological characteristics comprise T wave amplitude and T-wave duration.

12. The method of claim 11 wherein the morphological characteristics further comprise T wave location.

13. The method of claim 10 wherein the morphological characteristics include R wave characteristics and T wave characteristics and wherein defining the sensing threshold waveform comprises defining the sensing threshold waveform based upon the measured T wave characteristics and the measured R wave characteristics.

14. The method of claim 13 wherein the R wave characteristics include R wave amplitude and R wave location.

15. The method of claim 10 wherein measuring comprises measuring the morphological characteristics of paced cardiac activity.

16. The method of claim 10 and further comprising providing a refractory period responsive to the measured morphological characteristics.

17. An implantable cardiac stimulation device comprising:

means for sensing cardiac activity of a heart;

means for measuring two or more T-wave characteristics of the cardiac activity; and

means for defining a time-varying sensing threshold waveform that varies during each cycle as a function of the two or more T-wave characteristics.

18. The device of claim 17 wherein the means for defining comprises means for processing T wave amplitude and duration to define the sensing threshold waveform.

19. The device of claim 17 wherein the means for defining comprises means for defining a time-varying sensing threshold waveform as a function of the two or more T-wave characteristics.

20. The device of claim 17 wherein the means for measuring comprises means for measuring T-wave characteristics and R-wave characteristics.